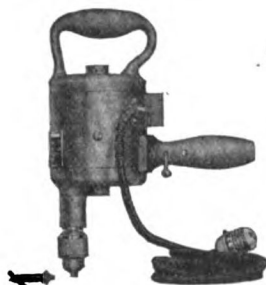


WILLEY ELECTRICALLY-DRIVEN TOOLS



No. 0



No. 3

PORTABLE DRILLS

Direct Current, Fan-cooled

For drilling holes in castings and metals for all kinds. No. 3 drill has two speeds; the slow speed for drills larger than $\frac{3}{8}$ -inch, and high speed for drills $\frac{3}{8}$ -inch and smaller.

No. 4 single-speed is fitted with No. 2 Morse taper instead of chuck; No. 4 two-speed, with No. 3 Morse taper.

Trade No.	Mfrs. No.	CAPACITY INCHES		Size of Chuck Inches	Speed R. P. M.	H. P.	Wt. Lbs.	Price Each
		Metal	Wood					
53962	0	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{4}$	1000	$\frac{1}{10}$	6 $\frac{1}{2}$	\$ 80.00
53957	1	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{8}$	800	$\frac{1}{4}$	10	100.00
53958	2	$\frac{1}{2}$	$\frac{3}{4}$	$\frac{1}{2}$	500	$\frac{1}{3}$	19	120.00
53959	3	$\frac{3}{4}$	1	$\frac{1}{2}$	350 & 900	$\frac{1}{2}$	21	140.00
53963	4	1	$1\frac{1}{4}$	....	460	$\frac{3}{4}$	33	160.00
53966	4	1	$1\frac{1}{4}$	....	250 & 460	$\frac{3}{4}$	36	180.00

Wound for either 110 or 220 volts, direct current.

Alternating and Direct Current

These drills are fitted with a universal motor and will therefore operate on any single-phase circuit, 60 cycles or less, as well as on direct current of the same voltage. Fan-cooled. Complete, as shown, except screw feed attachment, which is supplied at a slight additional cost. Handles removable.

No. 3U is the same as No. 2U except that it is provided with two speeds. For drilling larger holes than $\frac{3}{8}$ -inch the drill bit must run at a slower speed than when drilling $\frac{3}{8}$ -inch and smaller.

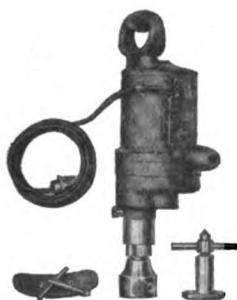
No. 4U, single-speed, is fitted with No. 2 Morse taper instead of chuck; No. 4U, two-speed, fitted with No. 3 Morse taper. Speeds given are those of drill spindle when drilling to a maximum capacity; as the size of holes is decreased, the speed is increased.

Trade No.	Mfrs. No.	CAPACITY INCHES		Size of Chuck Inches	Speed R. P. M.	Wt. Lbs.	Price Each
		Metal	Wood				
53964	1U	$\frac{1}{4}$	$\frac{5}{16}$	$\frac{1}{4}$	1000	7	\$ 80.00
53967	$1\frac{1}{2}$ U	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{8}$	800	9 $\frac{1}{4}$	100.00
53960	2U	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{1}{2}$	500	15	120.00
53961	3U	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{1}{2}$	350 & 900	17	140.00
53965	4U	$\frac{3}{4}$	1	..	460	30	160.00
53968	4U	$\frac{3}{4}$	1	..	340 & 600	33	180.00

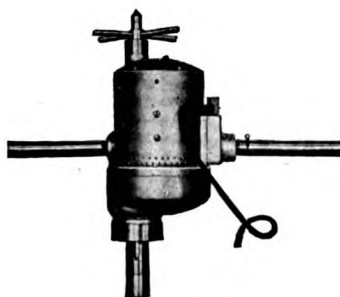
Wound for either 110 or 220 volts.



No. 1U



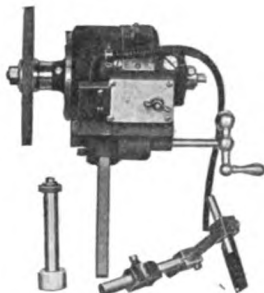
No. 3U



No. 4U

IN ORDERING PLEASE GIVE TRADE NUMBER AND ALSO DESCRIPTION.

WILLEY ELECTRICALLY-DRIVEN TOOLS



CENTER GRINDERS, WITH HAND FEED

These machines have been designed specially for grinding lathe centers. They are entirely self-contained, and have no loose parts to get lost or misplaced. Complete, as shown, with wheel and internal grinding attachment. Larger or smaller wheels can be used.

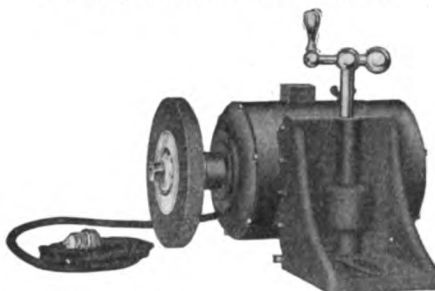
When used for other than cutter grinding, the clamp for holding adjustment arm can be removed. The wheel end bearings are all made taper with adjustment for taking up wear. Made in three sizes. Shank removable.

Trade No.	Mfrs. No.	Traverse of Wheel Inches	Size of Wheel	Size of Shank Inches	Wt. Lbs.	H. P. of Motor	Speed R. P. M.	Direct Current	PRICE, EACH 2 or 3-phase	Universal
53976	1	3	5x $\frac{3}{8}$ x $\frac{3}{4}$ -in. hole	$\frac{1}{2}$ x1	15	$\frac{1}{4}$	4500	\$ 90.00	.....	\$100.00
53977	1 $\frac{1}{2}$	3	6x $\frac{1}{2}$ x $\frac{3}{4}$ -in. hole	$\frac{5}{8}$ x1 $\frac{1}{4}$	27	$\frac{1}{2}$	3600	110.00	.....	120.00
53978	2	5	8x1x $\frac{7}{8}$ -in. hole	$\frac{7}{8}$ x1 $\frac{1}{2}$	57	$\frac{3}{4}$	2400	140.00	150.00	.....

Wound for either 110 or 220 volts, direct or alternating current, 60 cycles.

These grinders can also be furnished without hand feed, at a reduction in price.

Speeds given are for direct current.



GRINDERS FOR LATHE CARRIAGE OR TOOL POST

With Vertical or Horizontal Adjustment

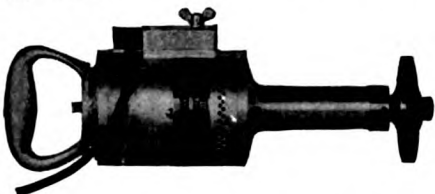
These grinders are the same as the center grinders, listed above, but are designed for heavier work. They can be used for grinding flat or round surfaces. May be bolted either to the tool post or carriage of a lathe, planer or shaper. Motor completely enclosed from dirt. Furnished with either vertical or horizontal

feed, or with pad for tool post or lathe carriage. Speeds are for direct current.

Trade No.	Mfrs. No.	Internal Grinding	External Grinding	Traverse of Wheel Inches	Wt. Lbs.	H. P.	Speed R. P. M.	Direct Current	PRICE, EACH 2 or 3-phase
53980	1	4x $\frac{3}{4}$ x $\frac{7}{8}$ -in. hole	8x $\frac{3}{4}$ x $\frac{7}{8}$ -in. hole	4 $\frac{1}{2}$	50	$\frac{1}{2}$	2400	\$140.00	\$150.00
53981	2	4x1x $\frac{7}{8}$ -in. hole	10x1x $\frac{7}{8}$ -in. hole	5 $\frac{1}{2}$	75	1	2000	180.00	190.00
53989	3	4x1 $\frac{1}{2}$ x $\frac{7}{8}$ -in. hole	12x1 $\frac{1}{2}$ x $\frac{7}{8}$ -in. hole	5 $\frac{1}{2}$	90	2	1800	250.00	260.00

Wound for either 110 or 220 volts, direct, and two or three-phase, alternating current, 60 cycles.

These grinders are made in larger sizes, also with 12 and 20-inch extended shaft. Prices on application.



HAND GRINDERS AND BUFFERS

These portable machines are adapted not only for grinding, but also for buffing, polishing, sanding or smoothing down castings; different wheels being required for different classes of work. Can be carried from place to place, and are ready for use when plug is fitted to lamp socket. Operators can stop and start these tools

instantaneously. The motor is air cooled. Furnished with wheel, as shown.

Trade No.	Size of Wheel	DIMENSIONS, INCHES Machine	Motor	Wt. Lbs.	H. P.	Speed R. P. M.	PRICE, EACH Direct Current	Universal
53979	6x $\frac{3}{8}$ x $\frac{7}{8}$ -in. hole	4 $\frac{1}{2}$ x4 $\frac{1}{2}$ x17	4 $\frac{1}{2}$ x7 $\frac{1}{4}$	15	$\frac{1}{3}$	3600	\$90.00	\$100.00

Wound for either 110 or 220 volts, direct or alternating current, 60 cycles.

Made in larger sizes, also with 12 and 20-inch extension arms. Prices on application.

NOTE.—Speeds of all the above grinders vary somewhat from those given, according to voltage and kind of current.

IN ORDERING PLEASE GIVE TRADE NUMBER AND ALSO DESCRIPTION.